

LEAD

(Data in thousand metric tons of lead content unless otherwise noted)

Domestic Production and Use: The value of recoverable mined lead in 2012, based on the average North American producer price, was about \$843 million. Six lead mines in Missouri, plus lead-producing mines in Alaska and Idaho, yielded all of the totals. Primary lead was processed at one smelter-refinery in Missouri. Of the plants that produced secondary lead, 14 had annual capacities of 30,000 tons or more and accounted for more than 99% of secondary production. Lead was consumed at about 76 manufacturing plants. The lead-acid battery industry continued to be the principal user of lead, accounting for about 86% of the reported U.S. lead consumption for 2012. Lead-acid batteries were primarily used as starting-lighting-ignition batteries for automobiles and trucks and as industrial-type batteries for uninterruptible power-supply equipment for computer and telecommunications networks and for motive power. During the first 8 months of 2012, 81.7 million lead-acid automotive batteries were shipped by North American producers, a 2% increase from those shipped in the same period of 2011.

Salient Statistics—United States:	2008	2009	2010	2011	2012^e
Production:					
Mine, lead in concentrates	410	406	369	342	345
Primary refinery	135	103	115	118	118
Secondary refinery, old scrap	1,140	1,110	1,140	1,130	1,140
Imports for consumption:					
Lead in concentrates	(1)	(1)	(1)	(1)	(1)
Refined metal, wrought and unwrought	314	253	272	315	300
Exports:					
Lead in concentrates	277	287	299	223	200
Refined metal, wrought and unwrought	75	82	83	47	50
Consumption:					
Reported	1,440	1,290	1,430	1,440	1,420
Apparent ²	1,490	1,410	1,400	1,540	1,520
Price, average, cents per pound:					
North American Producer	120	86.9	109	122	114
London Metal Exchange	94.8	78.0	97.4	109	91.0
Stocks, metal, producers, consumers, yearend	73	63	65	47	66
Employment:					
Mine and mill (peak), number ³	1,200	1,200	1,500	1,550	1,550
Primary smelter, refineries	340	310	290	290	290
Secondary smelters, refineries	1,600	1,600	1,600	1,600	1,700
Net import reliance ⁴ as a percentage of apparent consumption	E	E	E	4%	2%

Recycling: In 2012, about 1.14 million tons of secondary lead was produced, an amount equivalent to 80% of reported domestic lead consumption. Nearly all of it was recovered from old (post-consumer) scrap.

Import Sources (2008–11): Metal, wrought and unwrought: Canada, 79%; Mexico, 17%; and other, 4%.

Tariff: Item	Number	Normal Trade Relations⁵
Unwrought (refined)	7801.10.0000	<u>12-31-12</u> 2.5% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: The global lead market was in surplus during 2012 owing to the buildup of lead stocks held in London Metal Exchange (LME) and producer warehouses. North American producer prices were relatively stable throughout the first 9 months of the year. LME lead prices were more volatile, averaging \$2,094 per metric ton in January, decreasing to \$1,854 per metric ton in June, and rebounding to \$2,169 per metric ton in September. Global stocks of lead held in LME warehouses decreased by 25% to 265,075 tons during the first 9 months of 2012. Domestic mine production in 2012 was expected to be relatively unchanged from that in the previous. In January, a silver-lead mine in Idaho that produced about 16,400 metric tons of lead in concentrate in 2011 was shut down for maintenance work and expected to be closed until 2013. A lead-producing mine in Alaska produced about 12% more lead in concentrate during the first 9 months of 2012 than it had in the corresponding period of 2011 owing to improved recovery rates.

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In June, the operator of the only domestic primary lead smelter announced that it had decided not to proceed with plans to construct a new primary lead plant. The existing smelter will be closed by yearend 2013, according to an agreement with the U.S. Environmental Protection Agency (EPA).

The market for secondary lead was tight during the first half of 2012, partially owing to a mild winter in many regions that reduced the quantity of failed lead-acid batteries compared to previous years. Many lead producers, especially older plants, faced increased operating costs owing to recent regulatory changes. In 2012, a secondary lead producer announced plans to close a 65,000-ton-per-year smelter in Frisco, TX, by yearend 2012, and a 70,000-ton-per-year smelter in Reading, PA, by early 2013. The company operated three other secondary lead smelters. In September, a leading domestic lead-acid battery manufacturer opened a new \$150 million 132,000-ton-per-year secondary lead smelter in Florence, SC. Another producer was completing an expansion project at its secondary smelter in Tampa, FL, to increase refined lead capacity by about fivefold to 120,000 tons per year.

Global mine production of lead was expected to increase by 11% in 2012 from that in 2011, to 5.20 million tons, mainly owing to production increases in China, and to a lesser extent in Mexico and Peru, offsetting declines in other regions. Global refined lead production was expected to increase by about 3% from that in 2011, to 10.9 million tons. Increased refined lead output was expected to be primarily driven by new production capacity in China (despite shutdowns of many smaller smelters) and increases in Italy, Kazakhstan, and Peru. Global lead consumption was expected to increase by about 3% in 2012 from that in 2011, to 10.8 million tons, partially owing to a 5% increase in Chinese lead consumption. The International Lead and Zinc Study Group forecast global refined lead production would exceed consumption by 180,000 tons by yearend 2012.

World Mine Production and Reserves: Reserve estimates for Australia and the United States were revised based on information from Government and industry sources.

	Mine production		Reserves ⁶
	2011	2012 ^e	
United States	342	345	5,000
Australia	621	630	36,000
Bolivia	100	110	1,600
Canada	59	53	450
China	2,350	2,600	14,000
India	115	118	2,600
Ireland	45	50	600
Mexico	220	245	5,600
Peru	230	235	7,900
Poland	60	60	1,700
Russia	105	105	9,200
South Africa	55	55	300
Sweden	62	60	1,100
Other countries	340	530	3,000
World total (rounded)	4,700	5,200	89,000

World Resources: In recent years, significant lead resources have been demonstrated in association with zinc and/or silver or copper deposits in Australia, China, Ireland, Mexico, Peru, Portugal, Russia, and the United States (Alaska). Identified lead resources of the world total more than 2 billion tons.

Substitutes: Substitution of plastics has reduced the use of lead in cable covering, cans, and containers. Aluminum, iron, plastics, and tin compete with lead in other packaging and coatings. Tin has replaced lead in solder for new or replacement potable water systems. In the electronics industry, there has been a move towards lead-free solders with compositions of bismuth, copper, silver, and tin. Steel and zinc were common substitutes for lead in wheel weights.

^eEstimated. E Net exporter.

¹Less than ½ unit.

²Apparent consumption defined as mine production + secondary refined + imports (concentrates and refined) – exports (concentrates and refined) + adjustments for Government and industry stock changes.

³Includes lead and zinc-lead mines for which lead was either a principal product or significant byproduct.

⁴Defined as imports – exports + adjustments for Government and industry stock changes; includes trade in both concentrates and refined lead.

⁵No tariff for Canada, Mexico, and Peru for item shown.

⁶See Appendix C for resource/reserve definitions and information concerning data sources.